
# Activity report Task 1.4:
# Framework conditions for bi-regional cooperation in the field of food and nutrition security

**Prepared by:**
Arlène ALPHA
Jacques LANÇON
Mylène NDISI
Jean-Michel SERS

**First draft: 21 March 2016**

**Disclaimer**: The views expressed in this report are those of survey respondents and of the report author, and not necessarily those of the CAAST-Net Plus project, nor of Cirad.

This report is a deliverable of the CAAST-Net Plus project, which is supported by the EC Grant Agreement 212625

## Acknowledgments

This report is an outcome of the CAAST-Net Plus project's task 1.4. on Framework Conditions for bi-regional cooperation in the field of food and nutrition security. The task was led by CIRAD (Centre de Coopération Internationale en Recherche Agronomique pour le Développement), with four contributing partners: MRS (Ministère de la Recherche Scientifique) in Senegal, CTA (Technical Centre for Agricultural and Rural Cooperation) in Netherlands, FCT (Fundacao para a ciencia e a tecnologia) in Portugal and MHESRT (Ministry of Higher Education and Scientific Research) in Egypt. A special mention goes to Nouhou Diaby (MRS) who was responsible for the contribution on private sector in innovation processes in the field of food and nutrition security in Senegal. Judith Francis (CTA) and Maria Maia (FCT) are also thanked for their advices on the literature review. As the coordinator of the CAAST-Net Plus project, Andy Cherry from the ACU (Association of Commonwealth Universities) provides ideas and contacts with other partners dealing with the same issues. CIRAD would not be able to conduct interviews in Kenya without the support of Mylène Ndisi, scholar at the Ecole Normale Supérieure de Lyon (master on research institutions and knowledge diffusion), who contributed to this report during her four months internship. All the respondents in Kenya, Burkina Faso and Senegal are acknowledged for their time to be interviewed, as well as the participants of the Workshop in Montpellier (30-31 March 2016) where a first version of this report was discussed.

**Table of Content**

## List of Abbreviations

| | |
|---|---|
| **ACP** | African, Caribbean and Pacific Countries |
| **ACU** | Association of Commonwealth Universities |
| **ASARECA** | Association for Strengthening Agriculture in Eastern and Central Africa |
| **AU** | African Union |
| **CAAST-Net Plus** | Advancing SSA-EU Cooperation in Research and Innovation for Global Challenges |
| **CAADP** | Comprehensive African Agriculture Development Program |
| **CHISEA** | Climate Change Impact on Ecosystem Services Eastern Africa |
| **CIRAD** | Centre de Coopération Internationale en Recherche Agronomique pour le Développement |
| **CNRST** | Centre National de la Recherche Scientifique et Technologique |
| **CTA** | Technical Centre for Agricultural and Rural Cooperation |
| **DCI** | Development Co-operation Instrument |
| **EC** | European Commission |
| **EDF** | European Development Fund |
| **EU** | European Union |
| **ERAFRICA** | European Research Area Network for Africa |
| **FARA** | Forum for Agricultural Research in Africa |
| **FCT** | Fundacao para a ciencia e a tecnologia |
| **FNS** | Food and Nutrition Security |
| **FONRID** | Fonds National de la Recherche et de l'Innovation pour le Développement |
| **FPA** | Forum Permanent de l'Agroalimentaire |
| **FP2A** | Fédération des Professionnels de l'Agro-alimentaire |
| **FRSIT** | Forum national de la Recherche Scientifique et des Innovations Technologiques |
| **HLPD** | EU-Africa High Level Policy Dialogue on Science, Technology and Innovation |
| **ICIPE** | International Insect Centre on Insect Physiology and Ecology |
| **ILRI** | International Livestock Research Institute |
| **INERA** | Institut National de l'Environnement et de la Recherche Agricole |
| **INSTAPA** | Improved Nutrition through Staple Foods in Africa |
| **IPR** | Intellectual Property Rights |
| **IRD** | Institut de Recherche pour le Développement |
| **ISRA** | Institut Sénégalais de Recherches Agricoles |
| **IRSAT** | Institut de Recherches en Sciences Appliquées et Technologies |
| **ITA** | Institut de Technologie Alimentaire |
| **JAES** | Joint Africa-EU Strategy |
| **KALRO** | Kenya Agricultural and Livestock Research Organisation |
| **MHESRT** | Ministry of Higher Education and Scientific Research |
| **MRS** | Ministère de la Recherche Scientifique |
| **MTA** | Material transfer agreements |
| **NACOSTI** | National Commission for Science, Technology and Innovation |
| **NGO** | Non-Governmental Organisation |
| **PAEPARD** | Platform for African European Partnership on Agricultural Research for Development |
| **PPP** | Public-Private Partnership |
| **R&D** | Research and Development |
| **RINEA** | Partnership between African and European partners to strengthen the bi-regional science, technology and innovation (STI) cooperation |
| **SMEs** | Small and Medium Enterprises |
| **STI** | Science, Technology and Innovation |
| **WAAP** | West Africa Agricultural Productivity Programme |

## Executive summary

Europe-Africa research and innovation cooperation is particularly crucial in the effort for ensuring food and nutrition security (FNS) in Africa. A number of initiatives have been set up to build the landscape of European Union (EU) and African Union (AU) cooperation. These initiatives provide a dynamic context for bi-regional research and innovation cooperation in FNS, but it is expected that more and better cooperation could exist if appropriate framework conditions were implemented. What are those framework conditions that could offer a better enabling environment to foster bi-regional cooperation? More specifically, what is considered by stakeholders themselves as good practices of bi-regional research cooperation in FNS? And what framework conditions could enable to enhance these good practices? These are the questions addressed in this report. The work is based on literature review – on quality partnership and framework conditions for research and innovation –, qualitative interviews with key informants of bi-regional cooperation in Kenya and Burkina Faso (around 30 people) and a survey on the role of private sector in bi-regional research cooperation Senegal (14 people). A workshop was organised to complement and enrich the report.

Framework conditions are generally understood in the literature review as conditions that ensure a "level playing field" for the development of a given investment but there is no formal and accepted definition of framework conditions for bi-regional cooperation. The report proposes to consider framework conditions as a number measures intentionally implemented (and not just macro-indicators) at three possible levels: the project or organizational level (measures from research teams and institutions), the national level (regulations, public policies) and the regional level (between states). Consultations in Burkina Faso and Kenya mainly concern the first two levels while the survey in Senegal mainly refers to the national level.

Based on concrete examples of bi-regional cooperation (mainly field projects but also networking and some cases where the private sector worked with research institutions), four key issues for ensuring good practices of bi-regional cooperation emerge from the interviews:

- Governance and management of funds, through transparent systems, well trained and accountable personnel and with good evaluation methods, as well as long-term funding and possibility mutual ownership (equal financial resources for research);
- Governance and management of partnerships, through effective information sharing (data sharing, continuity of access after the project is complete, adequate information for dissemination of research results to farmers for instance), transmission of knowledge (e.g. internships) and all formal tools on governance (contracts, conventions, governance bodies, etc.);
- Mutual or reciprocal interests, so that realities of hunger and malnutrition in the South are well understood by the North, academia and private sector relations are encouraged and mutual trust ensured;
- Use of research results, which seems particularly critical when bi-regional cooperation involve private sector's representatives (incl. producer organizations).

Having identified the key issues of good practices in bi-regional cooperation, interviewees put forward different elements that encourage the possibility of these practices. They are classified in five categories of framework conditions:

- Mobility issues: they refer to measures taken by research teams at the organizational level (e.g. research trips) as well as to visa regulations for students or researchers at the national level;
- Multi-stakeholders forums: the existence of spaces where various stakeholders could exchange on FNS issues, notably at the national level, create opportunities for building interpersonal relations, identifying potential partners and facilitating connection between researchers and policy makers, researchers and the private sector;
- Public policies: clear orientation of public policies (e.g. on support to nutrition research programmes other than food or bio fortification) and policy coherence (e.g. support to local onion production in Senegal and regulation of imported onions), at the national level, appear also to be critical framework

conditions. More generally, the issue of strengthening relations between the world of research (public, private) and the world of policy making has been raised.

- Public investment research: more public investment in research and maybe the existence of a research ministry with a department of FNS would be a favourable factor for bi-regional cooperation.
- Intellectual Property issues: protection of research work is a critical issue in whatever partnership, through tools like agreements rather than patents which are considered too expansive in Burkina Faso and Kenya. In Senegal, it has been raised that protection of research results that have been achieved in collaboration with private actors and the lack of visibility of the private sector in such collaboration, may constitute a constraint in encouraging the private sector to invest in research and development.

The confrontation of the literature review with the field work in Kenya, Burkina Faso and Senegal confirms the relevance of some of the framework conditions found through the literature, but leads also to minor the role of others. This is typically the case of standards and norms.

As policy recommendations, one may retain that framework conditions have to be set up depending on decision scales (research teams, organization, national and regional) and some influencing drivers of the EU-Africa cooperation (environment, set of measures, designs of collaboration, management of cooperation).

Practical propositions to foster EU-Africa cooperation in ST&I in efficiency could be the creation of (i) an observatory of EU-Africa cooperation in ST&I – with extended role – and (ii) a network of international EU-Africa research platforms dedicated to AR4D. Such propositions will be submitted to the other partners of the CAASTNet+ project, at a workshop that will be organized in Montpellier, on the 30$^{th}$ and 31$^{st}$ of March 2015.

# 1. Introduction

## 1.1. Food and nutrition security challenges in Africa

The sub-Saharan Africa, more than any other region in the world, remains particularly concerned by the evolution of food and nutrition insecurity (FNS). According to the last JRC Science and Policy Report on 'Global Food Security 2030'[1], in sub-Saharan Africa, there has even been an increase in the absolute number of chronically hungry people reported (from 176 million in 1990-1992 to 214 million in 2012-2014).

Research is requested to contribute to address this FNS challenge, by providing better understanding of the diverse situations, of their determinants and by proposing solutions. It is worth noting that the concept of FNS is a subject of research as such. The definition of food security has strongly evolved since its first formulation in 1974 and terminology issues are still debated (CFS, 2012). As in CAAST-Net Plus (2014), the term "food and nutrition security" is used to better underline the multi-faceted nature of FNS and the existing links between food security and nutrition in particular. This terminology is consistent with the EU's Food Security[2] and Nutrition[3] Policies, part of the global EU development policy[4]. Food and nutrition challenges are now also considered under the 2030 Agenda comprised of 17 new Sustainable Development Goals (especially Goal 2: Zero hunger), which will guide policy and funding from a wide range of donors, including the EU and its Member States, for the next 15 years.

Besides States that are traditionally in charge of FNS, notably through public research, and in the context of public resources reduction, the private sector emerges today as a major actor in the FNS field. As recalled by Eu-Africa HLPD (2015), the private sector is very diverse and goes from smallholder farmers to multinational agribusiness. In terms of supporting research, the role of private sector is schematically passing through the development of private research (research and development investments, e.g. on high-yields seeds or on fertilizers), and also through the funding of public and/or private research, especially through Public-Private Partnerships (PPP). The Bill and Melinda Gates Foundation, for instance, is one illustration of private funding of public research. In fact, one objective of the CAAST-Net Plus project is to better introduce the private sector in the landscape of bi-regional research cooperation. The reinforcement of bi-regional cooperation is complemented by a better partnership with the private sector; this is the public-private dimension of the bi-regional cooperation. The link with industry is expected to facilitating the translation of R&D outputs into new technologies, goods and services (CAAST-Net Plus, 2013).

In concrete terms, because FNS is an end which requires to addressing many determinants, the scope of FNS research is very wide. As illustrated by the case studies presented in this report, research activities go from seed production, soil fertility to food fortification or management of food waste.

## 1.2. European Union-African Union Research and Innovation cooperation landscape

EU-Africa research and innovation cooperation is particularly crucial in the effort for ensuring FNS in Africa. This cooperation is part of a wider framework of cooperation and development support for Africa.

The EU has been supporting development in its own neighbourhood and in Sub-Saharan Africa for decades. Several frameworks govern EU relations with Africa: the **European Neighbourhood Policy**, that was revised in 2015, spelling out the Union's new approach to its eastern and southern neighbours; the **Cotonou agreement** which provides a legal basis for relations with Sub-Saharan African countries together with Caribbean and Pacific countries[5]; and more recently the **Joint Africa-EU Strategy** (JAES) adopted by the African and European Heads of State at the Lisbon Summit in 2007, covering the whole African continent.

[1] Science and Policy reports- Joint Research Centre - Assessing trends with a view to guiding future EU policies - Global Food Security 2030 (2015).
[2] Communications on the EU's Food Security and Humanitarian Food Assistance Policies (COM(2010)127 and COM(2010)126).
[3] Communication "Enhancing Maternal and Child Nutrition in External Assistance: an EU Policy Framework (3241st Foreign Affairs Council meeting Brussels, 28 May 2013, CM 2757/13).
[4] Increasing the impact of EU Development Policy: an Agenda for Change (COM(2011) 637 final).
[5] Excluding South Africa.

At the 4th EU-Africa Summit 2014, African and European Heads of States and Governments adopted a second roadmap for the period 2014-2017[6]. It focuses on the implementation of the Joint Strategy on five priority areas. Amongst the five areas of cooperation, **science, technology and innovation** (STI) is playing a cross-cutting role, because investment in STI was considered as an important driver to the attainment of all other socio-economic development objectives, including the new Sustainable Development Goals (SDG) targets. STI was also embedded as a pillar in the third cooperation area entitled 'Human development' with the main objective being the promotion of human capital development and knowledge; skills based societies and economies, in particular by strengthening the links between education, training, science and innovation, and better manage mobility of people[7].

In concrete, as for today, the EU-AU research and innovation landscape (regardless of EU Member States bilateral programmes) is composed of the following major initiatives:

a) A series of **collaborative research and innovation projects** funded under the EU Framework Programmes for Research and Innovation (FP7 for the period 2007-2013 and Horizon 2020 for the period 2014-2020): an impact assessment of selected FP7 supported research projects on FNS was performed by CAAST-Net+ under WP 1.1;

b) Another series of FP7/H2020 **networking projects** aiming at strengthen the quality and scope of the EU-Africa STI relationships (including CAAST-Net+, RINEA and ERAFRICA);

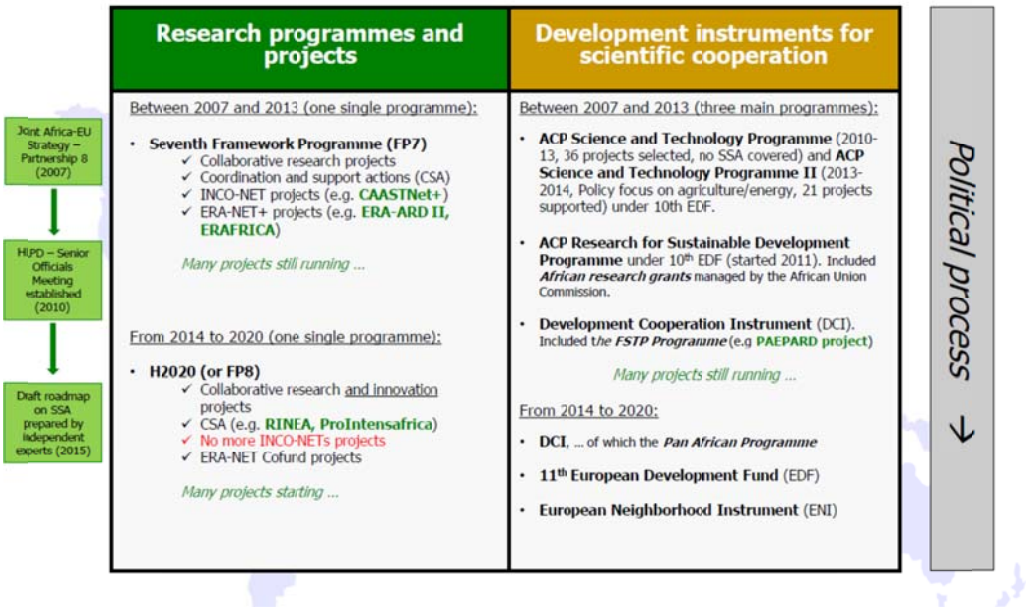
c) A combination of type (a) and (b) initiative through the **ProIntensafrica** project funded under Horizon 2020 (2015-2017): It aims to develop a proposal for a long-term research and innovation partnership between Europe and Africa with a focus on the improvement of the food and nutrition security and the livelihoods of African farmers, by exploring and exploiting the rich diversity of pathways leading to sustainable intensification of African agro-food systems, with support of the relevant policy environment.

d) **STI capacity building development projects and/or programmes**, financed under EU development programmes (EDF, DCI), supporting capacity building in Africa (e.g the PAEPARD project; the Programme for S&T Innovation and Capacity Building in ACP Countries; and projects financed under the African Union Research Grant Programme);

e) **EU-Africa High Level Policy Dialogue on Science, Technology and Innovation (HLPD)**
The HLPD on Science, Technology and Innovation was adopted at the 2nd Africa-EU Summit in Tripoli in 2010 as an important element of the Joint Africa-EU Strategy (JAES). The dialogue serves as a platform for regular exchanges on research and innovation policy and aims to formulate and implement long-term priorities to strengthen Africa-Europe cooperation on science, technology and innovation. An HLPD expert working group was set up in April 2014 and tasked to developing an input to a roadmap towards creating a ***long-term jointly financed Research and Innovation Partnership with a first focus on food and nutrition security and sustainable agriculture***. This initiative acknowledged Food and nutrition security and sustainable agriculture as a top STI priority for both continents in the coming years. The final input to the roadmap was finalized during the course of 2015 and should be endorsed by African and European Heads of State and Government at the 5th EU-Africa Summit in April 2016. If adopted, the roadmap should build on ***ProIntensafrica*** initiative's first results.

[6] Initially, the First Action Plan (2008-2010) and the Second Action Plan (2011-2013) of the Joint Africa-EU Strategy had focused on 8 priority areas of cooperation.
[7] http://ec.europa.eu/research/iscp/index.cfm?pg=africa#policydialogue

**Figure 1. EU-Africa research cooperation landscape since 2007**




Despite this dynamic context, EU-Africa research and innovation cooperation in all sectors remains a huge challenge given the disparity between the two regions in priorities and levels of public resources dedicated to research[8]. According to the FAO and the World Bank, one of the biggest obstacles in agricultural development is the lack of enough public investment in research. In Africa, in almost half the continent, investment in agricultural research had at the time significantly decreased (FAO, World Bank, 2011).

The challenge is to ensure a real and quality cooperation despite all these disparities whatever the forms of cooperation are, rather than cooperation only in "theory". The lack of an enabling environment (horizontal issues and framework conditions) in Africa and in the EU emphasizes the difficulty of ensuring the quality of bi-regional research and innovation cooperation in FNS. This also affects the participation of a wider range of stakeholders in the development of agriculture in Africa, in particular to "support systems for facilitation of private investment in agriculture, agri-business and agro-industries"[9]. It is therefore important to better understand what kind of framework conditions could offer a better enabling environment to foster bi-regional FNS cooperation.

### 1.3. **Objectives**

The purpose of the particular task 1.4 under WP1 of the CAAST-Net Plus project is to examine horizontal issues and/or framework conditions affecting the quality, conduct and results of bi-regional FNS cooperation. Recommendations to bi-regional STI actors, policy makers, programme owners and research managers are expected to reduce barriers and enhance the quality & impact of cooperation (CAAST-Net+, 2013).

A first issue to achieve this objective is to look at the concrete practices of EU-Africa private and public sector cooperation in the FNS domain to single out what is considered by stakeholders themselves as good practices of bi-regional FNS cooperation. A second issue is to identify what framework conditions could reduce barriers to/ or foster the development of good practices in bi-regional FNS cooperation.

A number of good practices in bi-regional FNS cooperation, especially those on governance and management of research and innovation programmes, and a number of framework conditions are certainly relevant for

[8] At the opposite, the ARIMNet agricultural research project among Mediterranean countries states that "similarities and complementarities among these countries are a good basis for international cooperation" (ARIMNet, 2012).
[9] AU Commission and CAADP public policy, notably the commitment from the second Malabo Declaration (2014).

other sectors than FNS. A particular attention is given to what is specific to the FNS domain and what framework conditions are horizontal or cross-cutting in nature that could apply also to Climate Change and Health, the two other global challenges considered in CAAST-Net Plus respectively under WP2 and WP3.

### 1.4. Research method

The work was divided in three stages:

- Literature review of national / European policy documents, regulatory frameworks related documents and a review of some of the current Africa-EU on-going projects in FNS-STI (see namely literature review under chapter 2.1);
- Consultations on a basis of a questionnaire, as a data collection method by face to face interviews in Kenya and Burkina Faso (see list in annex), and interviews on the specific role of private sector in bi-regional FNS cooperation in Senegal (see list in annex). These countries were selected due to partners' presence (CIRAD in Kenya and Burkina Faso, MRS in Senegal) which facilitated an easy access to key informants. All institutions interviewed were selected with respect to their experience in Africa-Europe STI cooperation;
- Organisation of a workshop in Montpellier on 30-31 March 2016 with the participation of …. The objectives of the workshop were to discuss the findings of the work made on FNS and to see whether and to what extent these findings could be enlarged to Health and Climate Change sectors.

CIRAD also participated in a workshop organized by CAAST-Net+ on 'International collaboration to pave the way for policy advice and enhanced framework conditions in research and innovation' organized in Manilla, Philippines, on the occasion of the Global FORUM on research and innovation for Health 2015, organized by the Council on Health Research for Development (24-26 August 2015)[10]. The workshop was an opportunity to report on our research methodology and first findings. Our participation was also a way to collaborate with participants from WP 3 (health).

## 2. Definition of framework conditions

### 2.1. Literature review

A number of references exist on the issue of good practice for international research cooperation or quality partnership (e.g. Maselli et al., 2005). These documents generally identify all efforts that each partner should undertake to ensure a good cooperation (mutual trust, respect, etc.). Factors that influence partners' practices and behaviours can be considered as framework conditions since they affect quality, conduct and result of bi-regional cooperation, but they are limited to internal conditions at the scale of the partnership. Other documents are interested in identifying framework conditions that foster the development of innovation in developing countries (e.g. Remøe et al., 2015), but not necessarily through international research cooperation.

It seems therefore there is no formal and accepted definition of framework conditions for the development of bi-regional STI cooperation, and even less so in the specific field of FNS. Generally speaking, framework conditions are those that ensure a conducive environment or a "level playing field" for the development of a given investment; it is synonymous to favourable or facilitating factors. The literature review below presents useful elements from both studies on quality of bi-regional cooperation and on framework conditions for research and innovation.

[10] Presentation title; 'Framework Conditions for Enhancing Bi-regional Cooperation in Food and Nutrition Security'.

Quality of bi-regional cooperation

Modalities of bi-regional research and innovation cooperation are strongly diversified (project, network, etc. with different combination of public/private involvement). Under the sole funding of EU's framework programme (FP) for research and innovation are a number of coordination and support projects[11].

Working on quality North-South partnerships, Maselli et al. (2005) consider an "ideal" partnership as a well-balanced dynamic in which partners are open to changes resulted from mutual learning, understanding cultural diversity, mutual interest and atmosphere of trust at all stages of the partnership, especially during the conception of research projects or programmes. **Four characteristics of a successful partnership** are then identified: (1) Commitment; (2) Skills of scientific partners; (3) Continuity of commitment; and (4) Complementarity of partners. It underlined that a pilot phase for partnership (incubation phase) would ideally allow the partners to better know each-other, thus verify these four characteristics, and address issues like Intellectual Property Rights (IPR), sharing of benefits, ethical issues, etc. Such a phase, if well managed, can help reinforcing mutual trust, understanding of intercultural differences, skills, etc. Moreover, **eleven principles** for the scientific North-South partnership were identified:

1. Conceive together the research object;
2. Establish an atmosphere of trust;
3. Inform and create networking;
4. Share responsibilities;
5. Promote transparency;
6. Ensure the follow-up of the cooperation;
7. Disseminate research results;
8. Use research results;
9. Share equitably gains;
10. Reinforce the research potential;
11. Ensure that gains are sustained.

In the context of international agricultural research for development, Horton and al. (2009) define a partnership as a "sustained multi-organizational relationship with mutually agreed objectives and an exchange or sharing of resources or knowledge for the purpose of generating research outputs (new knowledge or technology) or fostering innovation (use of new ideas or technology) for practical ends". The scientific council of CIRAD has built on this work to propose a definition of a "full partnership" concept (Box 1). In addition, four functions of the partnership are identified - orientation, implementation, evaluation and ownership - these functions being generally put together under the concept of finalised research.

**Box 1. A "full partnership" according to CIRAD**

The scientific council of CIRAD proposes three criteria to define a "full partnership", these criteria being also used to evaluate the quality of partnerships:

- First is **institutional representation**, which means that individuals involved in the partnership should do so, on behalf of their respective institutions and should then express the visions and research questions of their institutions.
- Second is an aspect of **reciprocity**. This aspect of reciprocity looks at what is the end result and if this end result is a win-win for both parties. This obliges clarity and a clear definition of roles for each partner: does the partnership consist in concertation, reciprocal information, or in the definition and implementation of a joint strategy?
- Third is the aspect of the existence of the partnership in a given **duration of time**. A successful partnership has a timeline in which a set of activities should be completed.

Source: CIRAD, 2011.

[11] See CAASTNet Plus (2014) for a comprehensive description of the EU FP instrument and an analysis of 74 projects funded under this instrument.

In addition, **stakeholder engagement** in research project is often seen as good way to ensure better-informed research, bi-regional research not being an exception. As underlined by the ERA-NET programme BiodivERsA (promoting European research on biodiversity and ecosystem services), successful stakeholder engagement can assist in "making research more credible, relevant and legitimate, therefore improving its impact, and leading to better outcomes" (Durham et al., 2014). Relevant stakeholders for a given research field may include non-governmental organisation, businesses, the wider public and policy makers.

Regarding specifically the Africa-Europe bi-regional cooperation, the EC (2014) conducted a study aiming at assessing existing bi-regional STI cooperation initiatives and identifying successful, best practice models of cooperation, as well as identifying gaps and effective financial mechanisms that have a positive impact. A first finding of the study is to underline the multiplicity of initiatives, ranging from collaborative arrangements to a number of project typologies. The study also stresses the importance of co-ownership as a core value of bi-regional cooperation. Recognising that effectiveness of bi-regional cooperation depends on a range of context-specific factors (what works in one situation may not be appropriate in another), the study nevertheless presents features of cooperation that are viewed as good practice:

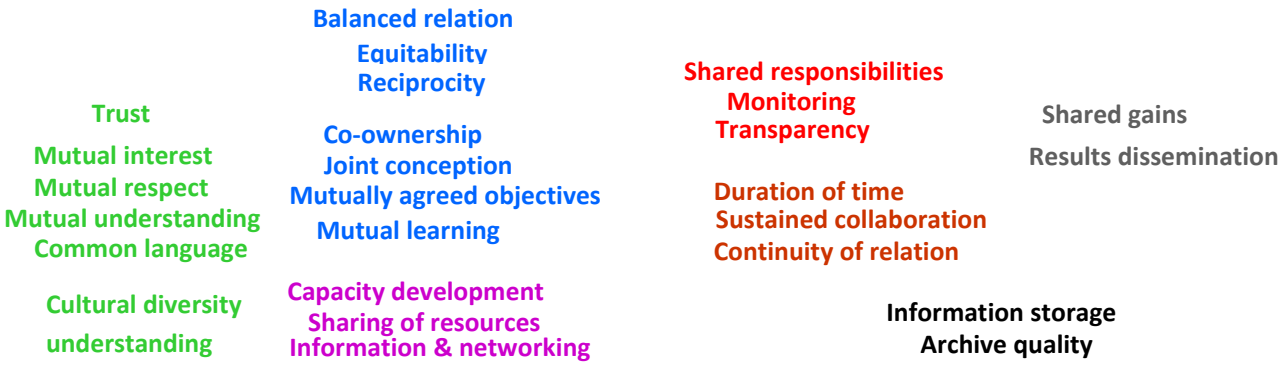
1. Equitability in all aspects of conception, budgets (co-funding being a key factor to foster co-ownership), responsibilities, decision-making, coordination and management;
2. Strong leadership and effective governance;
3. Clarity and understanding of joint objectives, of division of responsibilities and roles;
4. Full transparency and good communication and information exchange;
5. Strong interpersonal relationships and mutual trust; and
6. Long-term investment (sustained partnerships).

Conversely, asymmetries in partnerships, notably in the context of financial contributions, in the coordination and management of responsibilities have negative impacts on the quality of partnerships (EC, 2014).

In a proposal formulated by the Working Group appointed by the EU-Africa HLPD Bureau (2015), experts propose the launch a long term jointly funded and co-owned Research and Innovation Partnership (R&IP) with, as a first priority, the role of science, technology and innovation in the field of FNS. Experts envisage three essential features of this new partnership to be successful: 1) Build a true Africa-Europe joint and balanced partnership; 2) The partnership should encompass, under a common vision, all existing (or under development) joint R&I activities, irrespective of their funding mechanism or legal instruments; 3) the partnership should enable local actions – adapted to the huge diversity of local contexts both in Africa and in Europe – to be linked with National, regional, continental and bi-continental policies in research, innovation, trade, capacity development, knowledge management, etc.

In all these studies, a number of key words are identified that could be represented in word cloud (see Box 2). These words refer to different aspects of research cooperation, such as postures, values, approaches, instruments. Some of these aspects are relevant for research in general and not specific to cooperation. This is the case for instance for all "downstream" issues of research, such as dissemination and use of research results so that they are translated in innovation.

**Box 2 Word cloud on quality international cooperation**




Source: the authors.

Classic evaluation criteria can also be used to appreciate the quality of partnership. Relevance is important as this allows linkage of a partnership to public policies and the end users. Efficacy is achieved by the impact of the research and lastly efficiency by evaluation of whether funds were used optimally at the end or during the partnership.

Framework conditions

Studying the framework conditions for innovation in Southeast Asia, Remøe et al. (2015) recall that many studies on innovation use a wide definition of framework conditions where those are typically "economic, regulatory or other conditions that are not part of the core set of research and innovation policies. This means that **general macro-economic indicators** are relevant, as are the level of education, demand-side factors, IPR and related regulations, as well as socio-cultural factors" (p. 9). While underlying that framework conditions vary from one country to another, Remøe et al. (2015) identify certain characteristics that "are often seen as conducive to innovation, such as the quality of the educational system and human resources, infrastructure, macro-economic conditions, and financial incentives through the taxation system" (p. 9). Besides macro-level conditions, they recall that very specific regulatory framework may create incentives to stimulate innovation, as this is the case with the environmental emissions **standards**[12].They then focus on a more targeted view of selected framework conditions in Southeast Asia: **IPR**, **material transfer agreements** (MTA), and **public procurement for innovation**.

On the issue of STI international cooperation, the CAAST-Net project (2009) studied the barriers, perceived or real, to participation in Africa-Europe cooperation in order to make recommendations for more and better Africa-Europe STI cooperation. Framework conditions were understood in this study as the environment under which international cooperation is conducted. In this environment, five parameters were identified as potential barriers (or conversely as favourable factors) for bi-regional cooperation:

1. **Organisations' services and infrastructures**: this refers to the immediate working environment of researchers, for instance the availability of facilities for visitors, administrative facilities, the ability to attract and retain researchers, etc. Issues such as cost and maintenance of research equipment and instruments, or training opportunities (often rare and discontinuous) are included here;
2. **Political stability and research agenda**: under this parameter, the idea that frequent changes in government, in science ministry or factors such as fraud or corruption may prevent international cooperation. Conversely, continuity in science policy for instance seems key to creating a working environment conducive;

[12] "Dynamic regulation of $CO^2$ emissions from cars, tightening the regulation over time, creates a powerful incentive for car producers to innovate clean cars" (Remøe et al., 2015).

3. **Funding and regulation**: this parameter comprises the types of funding (the chosen funding model may influence the success of international cooperation), bureaucratic aspects, the facility to meet new partners to conduct a funding application, as well as intellectual property policy, research ethics, standards, technology transfer regulations and laws (e.g. on employment);
4. **Information and awareness**: this parameter deals with the issue of information availability, accessibility (e.g. language) and quality (up-to-date information), about opportunities of international projects, how to apply, how to identify potential collaborators, etc.;
5. **Transport and mobility**: the main areas considered under this parameter cover the issue of how easy it is to attend meetings, conferences, and training courses or work overseas (visa regulation, language barrier, etc.).

A similar exercise was conducted in the ARIMNet project to address issue of coordination of the agricultural research in Mediterranean countries. The purpose of one of the tasks was to identify barriers that could hinder coordination and cooperation in the Mediterranean. Distinguishing between joint activities (process of internationalisation of research activities) and integrated projects (transnational activities), it was shown that a potential barrier in the first case will not be necessarily considered as such in the second case. For joint activity, where partners have common will to work together but according to their own rules, issues of common standards for instance will be particularly relevant. The work also showed that very few barriers exist, but two main issues arise: i) **recruitment and exchange of young scientists**; ii) **IPR management**. Lastly, more than just identifying barriers to joint or transnational activity, specifying the different steps of collaborative projects, possible barriers for each step and potential overlap with national procedures proved to be particularly useful to better understand drivers of Mediterranean coordination and cooperation.

More recently, in a report commissioned by the European Commission – DG RTD in 2012 (EUR 25508 EN), a group of experts made several recommendations to develop a more collaborative and integrated European strategy for international cooperation in STI, including the need to strengthen framework conditions for and removal of barriers to international cooperation. The experts in particular consider three levels to foster international STI cooperation. The most basic level concerns a comprehensive framework to **forward techno-globalisation** and international STI cooperation in general. It is rooted in international alignments and agreements as well as regulatory measures aiming to create comparable and fair conditions for international exchanges and transactions in the field of science, technology and innovation. The second level to foster international STI cooperation emphasises **general opening measures**. These include the participation and possibly funding of foreign researchers (and/or research organisations and/or companies) in national programmes, the portability of grants across borders (in- and outward), facilitation of mobility of researchers and students and especially also the opening of labour markets for foreign researchers. Finally the experts consider that targeted STI internationalisation interventions, often based on **bilateral and multilateral agreements and often executed via joint or coordinated calls for proposals**, constitute the third level for international STI cooperation without being necessarily the 'summit' of international cooperation (suggesting that they are only implemented if the "lower" two aggregate levels of international STI cooperation are fulfilled or are not adequate to fulfil overarching objectives).

The report inspired very much The European Commission in defining its Communication entitled 'Enhancing and focusing EU international cooperation in research and innovation: a strategic approach' (2012). This strategy is currently implemented through Horizon 2020 and help to define priority/new avenues of cooperation with third countries/regions including Africa.

From this literature review, complemented by discussion with CAAST-Net resource persons[13], one may retain that framework conditions are concrete **measures** that result from intentional interventions[14]. They include dedicated or specialised instruments intended to ensure level playing fields. It is also possible to draw the main framework conditions that emerge from the literature review through word cloud (see Box 3).

[13] Including from other Work Packages. See for instance WP3 on EU-Africa Health research cooperation, Gaborone, Botswana, 6th November 2014.

[14] They are not "passively or generically 'there', but are shaped by government and public policy" (Remøe et al., 2015, p9).

**Box 3. Word cloud on framework conditions**

Information/ data storage & sharing
Scientific infrastructures
Communication infrastructures
Facilitating mechanisms between research – private sector and the government
Mobility
Visas
IP regimes
Incentives to engage on R4D
Industry-academia relations
Political stabilitv
Political will
National funding schemes
Support from the government to researchers
Good collaborative practices
Ethical standards

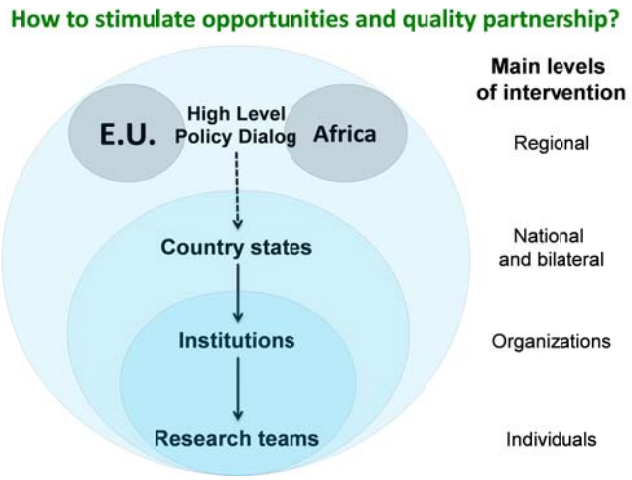
Source: The authors.

## 2.2. Our approach to framework conditions

In this study, an effort is made to conceptualize framework conditions for bi-regional cooperation, that means measures implemented at different levels (project, national, regional) that encourage African and European actors (public, private) to undertake quality cooperation in research and innovation in the field of FNS.

This conceptualisation builds on the study made by the EC (2014), which presents success criteria of Africa-Europe bi-regional STI cooperation at the project level, at the programme and regional level, and at the bi-regional level. At the project level, the EC (2014) identified that full and committed partner engagement, strong interpersonal relations, mutual trust, institutional diversity and complementary skills, visionary leadership and coordination, and more widely shared ownership are critical criteria. At the programme and regional level, Member State commitment, the policy and regulatory environment and national commitment to STI create a conducive environment. At last, high-level political and executive support for bi-regional cooperation is often behind successful initiatives.

**Box 4. Framework conditions for EU-Africa coooperation in STI**




Source: authors.

In addition, following Remøe et al. (2015), the focus adopted here for framework conditions is on measures that can be implemented by different actors at different levels. For instance, the issue of research mobility – which is frequently mentioned in the literature review – refers both to visa regulation implemented by the administration at the national level, and to specific mechanisms envisaged by the research teams as a way to

manage human resources and build capacities at the project level. Funding is also typically a framework condition that is relevant at the project scale (budget management by the research teams), at national scale (research funding mechanisms implemented by the government), and at the regional scale (funding opportunities resulting from Africa–EU initiatives). In this perspective, funding includes the management of funds such as co-funding, openness, inclusiveness and mobility of funds, as well as the contribution of public funding to research.

While they are important in influencing research collaboration, this study will not address framework conditions that refer to general macro-level indicators, singled out according to their nature that point to factors political, economic and cultural. The political stability as a calm environment for relations is of course a key condition, without this condition potential partners become sceptic of making high risk investments for example, but there is little room for manoeuvre at the scale of research project or at regional level to implement concrete measures ensuring political stability (except maybe indirectly through "science diplomacy"). Our approach of framework conditions as concrete measures is also useful to make concrete policy recommendations aiming at reducing constraints to/encouraging bi-regional cooperation in FNS.

## 3. Case studies

Burkina Faso and Kenya are very different in terms of population (respectively 17M and 40M), also in terms of agroecosystems, social and economic development, agricultural models (largely centred on family agriculture in Burkina Faso while with a larger focus on commercial agriculture in Kenya), etc. However, FNS remains a critical challenge in both countries. In 2011, over 10 M of the Kenyan population suffered chronic food insecurity and malnutrition. Over 2M needed emergency relief. Nearly 30 % Kenyan children at the time were termed as undernourished (ASCU, 2011). In Burkina Faso, one household out of three was food insecure (37% in the rural areas while at 31% in the urban areas) according to the last food security survey in 2008 (Burkina Faso, 2014).

In both countries FNS is high on the political agenda. A National Policy on FNS has been recently adopted in both countries, which clearly stresses the need for developing research and innovation in the field of FNS and identifies research institutions as key stakeholders in the fight against hunger and malnutrition. In Kenya, in the 2015 budgetary allocation, education/research was prioritized third after infrastructural development and agriculture.

However, the link between the world of research and innovation and the world of FNS interventions may not be so strong in practice. The institutional landscape of research is different between the two countries, with a Ministry for Research for three years[15] and a national fund for research and for innovation in Burkina Faso, while research is under the Ministry of Education, Science and Technology in Kenya. The case studies tend to show that the Ministries of Agriculture and of Health are implicated in food and nutrition security but with a disconnection with the Ministries in charge of research.

### 3.1. Overview of current practices of bi-regional cooperation

Organisations interviewed are involved in FNS through a wide range of activities. Just to take a few examples in the case of Kenya: soil fertility was a priority of mostly private enterprises and research institutions with a focus on the ecological control of pests (e.g. Dudutech in Kenya). The Rural Outreach Program in Kenya had an FNS project for value addition of crops in Western Kenya through the use of the Soya Plant to fix nitrogen in the soil for better maize production. Seed production (getting the right cultivars not forgetting the reduction of yield gaps) is an area for example that the French government funded projects focused on in Kenya. The International Insect Centre on Insect Physiology and Ecology (ICIPE) has a focus on plant health and environment health for example how to manage mono cropping and increase pollination. The

[15] Since the election of a new president in November 2015, research is now under the Ministry of Higher Education, Scientific Research and Innovation.

International Livestock Research Institute (ILRI) specializes in research on animal production, with a focus on the impact on livelihoods. Management of waste and safe post-harvest management, as well as resilience to climate change are subjects that are increasingly popular. Regarding nutrition specifically, Nestlé in Kenya for instance had a project to fortify rice with zinc for higher nutrition content.

Moreover, modalities of bi-regional cooperation on all these FNS issues are very diverse, as already shown in previous studies (e.g. EC, 2014). These modalities can nevertheless roughly be divided in (short term) field projects and (long-term) research networking, the private sector being potentially involved in both and especially through public-private partnerships.

### 3.1.1. Field projects

Field projects as one modality of bi-regional cooperation mainly involve public research organisations from Africa and the EU and are financed by the EC or EU Member States and/or the African Union or African Member States. The project Improved Nutrition through Staple Foods in Africa (INSTAPA), funded by the European Commission under the FP7 and implemented in Burkina Faso, is a typical example of such field projects (see **Box 5**). Funds for African, Caribbean and Pacific countries (ACP) are also mobilised for bi-regional research cooperation programs. This is the case of the project Aval Fonio in the field of FNS, implemented also in Burkina Faso (see Box 6).

**Box 5. The project INSTAPA**

The project INSTAPA is funded by the EC under the FP7, coordinated by Wageningen University and implemented in a number of developing countries including Burkina Faso where the public research organisation, IRSAT, is involved. The objective of the project is to improve micronutrients (zinc, iron, vitamin A) in staple-food (millet, sorghum, maize, cassava) for better nutritional status and health of women and children. The choice made in Burkina Faso was to enhance micronutrient bioavailability of the staple food concerned through a "food to food" approach for example through enriching a different food using iron from leafy vegetables.

**Box 6. The project Aval Fonio**

The project Aval Fonio is a joint project (2012-2015) financed by the African Union and the African Caribbean and Pacific (ACP). It has the participation of Burkina Faso's food processing industry, Senegal, Mali, Guinea and Burundi. It is a project meant to valorize the consumption of the grain, Fonio. Burkina Faso as a partner through IRSAT focused on food processing and innovative processes. Organizations in Senegal were the Ecole polytechnique and Cheikh Anta Diop University (UCAD), Institut de Recherche Agronomique du Guinée (IRAG) and Institut d'Economie Rurale (IER) in Mali.

### 3.1.2. Research networking

Research networking is another way through which the two regions are coordinating which has been mentioned in the interviews. CIRAD for example possesses partnership platforms with other institutions *(Dispositifs en partenariat, DP)*. The IRD has a similar platform for international research cooperation: the International Mix Laboratories (LMI)[16]. An example of a CIRAD partnership platform is the DP-SISTO, a network on Food Security and Spatialized information Systems, Territories and Observatories, in West Africa. Its aim is to provide a network for information sharing and support to existing projects in the field of food security. It associates around 30 scientists from various institutions who then inform policy drafting.

[16] CAAST-Net Plus (2014) gives a detailed description of what is LMI and a number of examples of LMI where IRD is present in Sub-Saharan Afria (see p.31).

### 3.1.3. Private sector's contribution

The qualitative survey conducted in Senegal on the role of private sector (firms but also SMEs in processing, distribution, producer organisations, etc.) in bi-regional cooperation shows the private sector plays a key role in contributing to FNS. Throughout the whole agricultural value-chains (processing, value addition to local products, preservation of nutritional value of food products, etc.), the private sector could potentially make food products available in quantity and quality, accessible on national (and international) markets, and thus address the demand for food.

In Kenya and Burkina Faso, though interviewees frequently evoked Public-Private Partnerships (PPP)[17] and felt these could be resourceful for Africa-EU collaboration in STI, it has been difficult to gather information on concrete examples[18]. In Kenya in particular, it is sure that PPP are becoming increasingly popular (experience in infrastructural development) but it seems to remain a promising mode of cooperation that still remains to be developed in the field of FNS.

This observation is consistent with the result highlighted by the EC (2014) regarding whether the private sector is engaged in bi-regional STI Africa-Europe cooperation. The study underlines the weakness of Africa's SMEs and their poor participation in bi-regional cooperation. However, a distinction has to be made between the role of SMEs and that of international companies. In Burkina Faso in particular, identifying international companies which participate in bi-regional research cooperation in FNS was not an easy task. However, lots of SMEs are involved in the production of locally-sourced infant flour of high nutritional value but they mainly work with NGOs or international organisations rather than with research institutions and do not have enough financial resources to engage themselves in research and development (R&D).

However, research relations between the public and the private sector do exist in the field of FNS and are certainly increasing. The survey in Senegal mentions the case of private enterprises which work with research institutions for the development of locally-sourced nutritional food products in line with the nutrition public policy. Another example is professional organisations that have strongly participated in a program on the control of fruit fly in partnership with researchers from the Directorate of Vegetal Protection to make sensitisation activities, a diagnosis of the problem and to propose good practices for integrated pest management. Projects funded by the World Bank through the West Africa Agricultural Productivity Programme (WAAP) or the National Fund of Agricultural and Agro-processing Research (Fond National de Recherche Agricole et Agroalimentaire, FNRAA), are also encouraging joint projects (enterprises/ research institutions). The survey gives the particular example of the AFTER project (African Food Tradition Revisited by Research) as an EU-funded research where the private sector has been involved (Box 7).

**Box 7. The AFTER project**

The AFTER project AFTER (www.after-fp7.eu) involves the private sector through enterprises members of the Association Afrique Agro Export (AAFEX, www.aafex.com) since the conception phase of R&D programmes, during the monitoring and evaluation phase, and for the demonstration and dissemination of results in enterprises. The AFTER project ended in November 2014 involved research institutions/ universities of seven African countries (Benin, Cameroun, Egypt, Madagascar, Senegal, Ghana and South-Africa) and four European countries (France, Italy, Portugal and United-Kingdom). It was funded by the Framework Programme (FP7). It aimed to revisit the knowledge and traditional African know-how in food processing, in the light of new technologies, for the benefit of consumers, producers and processors in Africa and Europe.

[17] Formally these are either government services or private venture businesses that are operated normally through partnerships between the government and private organizations.

[18] The EU-Africa HLPD (2015) underlines that "Known research ‐ private sector partnerships have been mostly established in the Health sector and have been dominated by international companies through Corporate Social Responsibility programs (e.g. Unilever) and alongside other focused public ‐ public funding mechanisms" (p.12).

## 3.2. Key issues for good practices of bi-regional cooperation

Interviewees mentioned a number of key issues to be considered to ensure good practices of bi-regional research cooperation regarding their experience in the field of FNS. These key issues are actually quite general and could also apply to global challenges other than FNS.

### 3.2.1. Governance and management of funds

A first area that the interviewees identified as a good practice refers to the governance and management of funds. Good management of these funds through transparent systems, well trained and accountable personnel, good evaluation methods like peer review, etc. was reiterated from the case studies of both countries. The centralized management of funds makes it easier for organizations to stay accountable.

Secondly, a common observation between the two countries was the need for long term funding for continuity even after the end of projects. The three to four year projects that are the norm today were considered not enough to set up cooperation and to manage a project. This was stressed from the interview with National Center for Scientific Research and Technologies (CNRST) and Research Institute in Applied Science and Technologies (IRSAT) directors in Burkina Faso. HM Clause seed production manager suggested 15 year investments for example. ICIPE CHIESA (Climate Change Impact on Ecosystem Services Eastern Africa)'s coordinator thought that an adaptation phase needs to be anticipated before the normal project time period because there is a lot that goes into synchronizing systems to be able to work together.

Thirdly, common funds were cited by both Kenya and Burkina Faso as a way to achieve mutual ownership of projects. The bilateral scientific cooperation agreement signed on 5th May 2015 known as "PAMOJA PHC" (Hubert Curien Partnership) in Kenya is such an example. It is a fund in which the French Ministry of foreign Affairs and National Commission for Science, Technology and Innovation (NACOSTI) could equally put in resources for research and has allowed access of French laboratories by Kenyan researchers.

### 3.2.2. Governance and management of partnerships

Effective information sharing is a component of partnerships that ensure partners will have the same level of information when projects end. Difficulties encountered by ICIPE when it comes to data sharing are: a lot of data is incompatible; raw data may be impossible to synthesize by partners who do not have the software and resources to do so. His personal observation was that scientists are scared of sharing data before they publish. From the studies it can be safe to say that what makes up good bi-regional cooperation practice is the effective transmission of knowledge through the training of students and effective capacity building. This could be through co-tutored programs or short term exchanges like internships and exchange programs. Scholars also travel internationally to make use of laboratories in Europe for example.

Continuity of projects even after they are completed was evoked as essential. A platform for data continuity would be essential as a store for information that could be accessed even after the project is completed. This is essential as a measure for valorisation of results of a project even after it is long terminated. This compliments the suggestion that projects needed to be funded for longer periods of time instead of the normal three to four years. Relaying results to the smallholders or to farmers after the projects was also stated as a necessity. They often do not have access to publications not the website pages on the internet and may not be able to read them.

Top-down relations may not be helpful at all for partnerships that are meant to be inclusive. Types of development projects exist where funds are given, then intermediaries, normally NGO's are given the funds, and they later channel the funds to local research institutions for specific tasks. IRSAT in Burkina Faso affirmed that a major problem is that such projects cultivate a sort of top-down approach that might not be favourable to international collaboration efforts. An example is a project on nutrition with Action Contre la Faim (ACF), Terre des Hommes and FAO. It is FAO that manages the project then delegates the roles to ACF and then

IRSAT. This sort of delegation in the top down approach is the example of many aid projects and development projects that do not necessarily give a chance for mutual participation.

Full inclusion of both parties is necessary for equity. For the National Institute for Environment and Agricultural Research (INERA) in Burkina Faso, its relations with Wageningen University are a good example and could be emulated for future collaborations. In the project INSTAPA, Wageningen University contacted IRD and later contacted IRSAT. Finally, the project got 11 partners on board. For mutual inclusion, they have rotational meetings every end year in each of the partner countries for the purpose of reporting and touching base. Results were presented in a clear manner from the beginning of the project. The clear protocol of the project made sure that each partner knew their role clearly. This made it that every partner was accountable for their responsibility accorded. It had leaders who knew and understood the functional system especially a dynamic coordinator who was available and took their time to inform/train whenever the need was there.

Lastly, are tools for formalization of cooperation for example contracts, conventions, norms and standards as well as formal governance bodies. There is need for formal and legal therefore concrete support so that the partnership is fluid and that partner organizations are well aware of their roles and their jurisdiction in such relations. There was consensus on the need for good monitoring and evaluation of projects that would be enabled by the tools above, but also forma governance bodies. The CHIESA project is one example where those formal governance bodies have been established for monitoring purposes (Box 8).

**Box 8. The project CHIESA**

The project is funded by the Ministry of Foreign affairs Finland and has the participation of universities, being the University of Finland, University of Dar es Salaam as well as research Institutes being ICIPE. The coordinator of this project explained further how a management board of the project incorporated the public sector through the membership of a representative from the Ministry of Environment and Mineral Resources in Kenya, a representative from ASARECA, The association for strengthening Agriculture in Eastern and Central Africa, with its offices in Uganda and a representative from the Food and Agricultural Organization, (FAO). The steering committee has members from all partner organizations.

#### 3.2.3. Mutual or reciprocal interests

Interviewees insist on the need for the North to understand the realities of hunger and malnutrition on the ground and that they should not act on misconceptions or beliefs. In the definition of projects, the problems in the South need to be understood and should be part of the reasons behind the construction of projects; this would result in efficacy (positive impact of the project). It seems also important for the North to understand the practical working conditions in the South (e.g. difficult access to internet). In short, mutual or reciprocal interests are therefore considered important in partnerships for research in food and nutrition security. It is especially helpful when projects are defined by both parties and later implemented equally by both parties. Some projects have had interests that are not too clear and that this is not of much help in establishing trust and confidence between Europe and Africa. Mutual participation can be illustrated by defining projects together from the beginning.

The survey on the private sector in Senegal also raises the issue of mutual interest, and above all of mutual trust, to encourage academia-private sector relations.

#### 3.2.4. Use of research results

Especially when bi-regional cooperation involve private sector's representatives, the issue of adding value and using research results becomes critical in what is considered as good practices. In Senegal, the vast majority of interviewees highlight the weaknesses of academia-private sector relations. Examples have been given of research results that have not been used enough by the private sector. For instance, it has been mentioned that the Senegalese Institute in Agricultural Research (ISRA) has developed new cultivars more resistant to

drought, with high potential yield (cowpea, cereals, etc.), but producer organizations have not been able to sufficiently use these results. Another example is the Food Technology Institute (ITA), which has long worked on processing technologies of local agricultural products, but the private sector did not take over. Imported products of often lower nutritional quality are now predominant on the domestic market.

Though the academia-private sector relations are far from being fully exploited, their importance is however well perceived. Some examples of good relations have been cited: a project of bread-making resulting from ITA research results; the fact that producers in horticulture are increasingly close to research for the choice of varieties and the issue of inputs. The experience of the Federation of agro-processing professionals (FP2A) has also been cited as a good example of exploitation of research results. This private organisation has developed syrups from research results (bissap, ginger, tamarind, etc.), jams (mango, papaya), dry mangoes, cans of vegetables and tomatoes, cereal-based products (Arraw, Thiakry, Sankhal, Thiéré are the names of these local products made of millet), infant flour, etc.

## 3.3. Type of framework conditions

Having identified what are the key issues for good practices in bi-regional cooperation, interviewees were asked to explain what is it that enables the possibility of these practices? What is it that ensures that different institutions over national frontiers actually collaborate in FNS research and innovation and that these are equal and mutually beneficial partnerships? Different elements have been put forward that are listed below through five categories of framework conditions. These framework conditions, or influencing factors, are those by which the good practices above were examined. Their description specifies the scale at which they are most relevant.

### 3.3.1. Mobility issues

At the organizational level, research trips are organized, especially for scholars. It could be in order to access facilities like laboratories or libraries or under tutorial research. For research institutions, funds to sponsor students' mobility rarely come from the local authorities or the government or private organizations for that matter. This means that if there is no budget for this during project definition; researchers will not be able to have funds.

Nationally, visa regulations for students are quite straight forward as long as a letter from the host institution as well as proof of funding is available. Several factors may either promote or make mobility difficult. Take the lack of the foreign delegation of a country in the partner country for example. Lack of the presence of the Holland Embassy in Burkina Faso was cited by IRSAT as a hindrance to easy relations with learning institutions in Holland for example. In Kenya the founder for the Rural Outreach Africa reiterated that Britain as a destination for scholars in Kenya is not easy to access. In Burkina Faso, some interviewees mentioned the difficulty of accessing the French embassy and others the fact that scholars were favouring English speaking countries (mainly United-States and Canada) as a destination for their research.

Statistics in Kenya show that in 2013, 13000 students were sponsored abroad by UNESCO. In the period 2009-2014, about 100 students were reported to have been sponsored to France from Kenya by the French Embassy. In Burkina Faso the French embassy has maintained its sponsorship of about the same number of students from Burkina Faso to France a year. Concerning the CHIESA project, out of 30 scholars, 25% from Africa were sponsored to Europe for a period of 1-6 months. ILRI in Kenya has a partnership with the Centre for International Migration (CIM) and is expected to host 4 Kenyan students who have completed their studies abroad in 2015. Concerning brain drain, the dean of Kabete Campus, University of Nairobi stated that university professors in Kenya have at one point or another studied abroad but gone back to Kenya to teach. For example the University of Nairobi has 275 academic members of staff with 75% who have had their PhDs from outside the country.

### 3.3.2. Multi-stakeholders forums

The existence of spaces where various stakeholders (researchers, public sector, private sector, donors, NGOs, etc.) could exchange on FNS issues, and build interpersonal relations has been identified as an important factor to encourage cooperation. These are platforms that have been established to unite policy makers, researchers, NGOs, private actors and the smallholders, in this case farmers, or consumers for example of infant meal. These structures are meant to allow communication between the actors above and to allow their visibility for better vulgarization of research. This could incite the private sector as it will have a way to relate to the public.

In Burkina Faso, the National Forum for Scientific Research and Technological Innovations (FRSIT) is a forum that was founded under the initiative of CNRST as a point of contact between research institutes and the private sector. Its priorities have however been noted to be in technological advancements for the food processing industry. It has been cited as organizing thematic meetings that are too specific and that do not necessarily allow a window for dialogue and sharing. It did not achieve its mandate but interviewees feel that this kind of forum could be a powerful factor to facilitate contacts between EU and African research institutions, contacts with other stakeholders and then encourage good practices of cooperation.

In Kenya, the lack of a forum where the Ministry of Agriculture, Kenya Agricultural and Livestock Research Organisation (KALRO), and NACOSTI could meet and discuss further partnership with other stakeholders has been raised. With relations at the local level, it gets easier establish relations internationally.

In Senegal, the structuration of private sector and the existence of forums or concertation platforms with all stakeholders to share knowledge and to express research needs were also considered as useful initiatives to encourage the private sector's involvement in the field of FNS research or to better use research results. The Permanent Forum of Agroprocessing actors (FPA) where SMEs are put together has been cited as a good example of such initiative, that contributes to develop and add-value to local agricultural products, thanks to research results. Interviewees also felt that intermediary structures especially in charge of the dissemination of public research results are lacking.

Conversely, the absence of concertation framework between researchers, private sector and policy makers was mentioned by the interviewees in Senegal as one of the constraints hindering private sector to engage in R&D. This constraint can be linked with the fact that priorities from private sector seem to not be in adequation with research themes[19], which are mainly decided by financial and technical partners as major funding of research.

Sub regional platforms include FARA, CAADP under the framework of the AU, ASARECA, The Federation of African Nutrition societies, the African Nutrition Society, and at the international level the Scaling up for nutrition movement just to mention but a few.

### 3.3.3. Public policies

Do FNS policies exist and if they do, do they favour collaborated research in FNS? Do also research policies exist? And if so what are the existing priorities, in particular in the field of FNS? Are public policies stable, clear and coherent?

From the studies carried out, there are clear policy documents in FNS (a national policy in FNS exists in both Kenya and Burkina Faso). However, the issue of their implementation, which depends a lot on aid and development projects, raises especially the challenge of coordination and the consideration of policy documents in interventions on the ground.

[19] More generally it has been stressed that time for research seems not in adequation with time for private sector, an issue already raised in the report of the task 1.2 under the CAAST-Net Plus project (CAAST-Net Plus, 2015).

In Burkina Faso, the National Nutrition Policy has been considered by some interviewees as being not so clear with respect to priorities given to fortification and bio fortification. In the INSTAPA project, the approach adopted by the researchers in Burkina Faso to not use bio-fortification but rather to use a "food to food protocol" created some misunderstanding and conflict with the Ministry of Health.

An asset that has been frequently mentioned in Burkina Faso is the existence of a ministry of research that assures that there is a national research system. This gives guidelines, through a national policy of research, an operational plan and funds like the National Fund for Research and Innovation for Development (FONRID). If well exploited this should help reduce problems of incoherence especially. Such support from the public may make it easier for this country to do research for innovation due to the existing political will. However, the new elected government in November 2015 did not maintain the existence of a Ministry of Research and Innovation, research now being considered under the ministry of Higher Education, Scientific Research and Innovation.

Moreover, research institutions seem to not contribute as much as they could to policy definition. The same with the private sector, which is largely solicited in Kenya and Burkina Faso to participate in research in FNS, but private-public relations seem currently not explored to the maximum. In Senegal, the absence of sufficient involvement of private sector representatives (e.g. producer organisations or SMEs in food processing) in the definition of policies –or research programmes– to ensure their needs are considered, has been mentioned as a key constraint in the contribution of the private sector to FNS achievements. The lack of consideration of private sector needs in the definition of public policies (in FNS, research, etc.) is also raised among constraints to R&D investment. Local enterprises are more motivated by short term gains than medium-long term investment in R&D. Foreign enterprises are interested in the penetration of their products on the local market thus more interested in import policies than in investing in R&D, and socio-professional organisations (producers, processors, etc.) are not involved in the R&D process.

However, if research turns more towards innovation this may incite the private sector to participate more in research. Again, in Burkina Faso the political will to develop research oriented towards development and innovation ("useful research") has been considered as a favourable factor.

Lastly, the issue of policy coherence has been raised by the survey on the role of private sector. A positive example that has been given is the seasonal trade policy on onion importation implemented by the public Authority of market regulation, which is considered as coherent with the stated objective of supporting local onion production to better supply domestic market in local onions. Another example is the development of high nutritional value fortified products which is supported by the national policy on nutrition.

#### 3.3.4. Public investment in research

According to all interviewees, investment of the public sector is not at the required level (this issue has been raised in Kenya, Burkina Faso but also in the survey on private sector in Senegal). Priorities in Kenya for example at the moment are in infrastructural development and as much as agriculture was prioritized third in the 2015 budget, when it comes to FNS, it is not easy to pinpoint exactly how much went into food security and nutrition as all these are dispersed under different ministries. In Kenya, just to show a few of the sample organizations fund sources, AFD releases 150 billion a year into projects. Research institutions like ICIPE solicit their funds also from foreign research funding bodies and governments as well as in kind contributions. For local NGOs like Rural Outreach Africa, preferred funding partners are trust foundations.

In Burkina Faso, ASTI (2014) underlines that the Agricultural Research & Development spending has followed a highly erratic pattern in recent years: "the government funds research staff salaries, but operating costs and capital investments are largely dependent on volatile donor funding". Investment in Agricultural R&D was only of 0.42 percent of its agricultural GDP, against the recommended 1% target set by the NEPAD and the United Nations (ASTI, 2014).

It seems that things would be easier with a research ministry with a department of FNS which would then be able to partner with NGOs and the private sector in matters FNS. In Burkina Faso, while recognizing the

importance of having dedicated funds for research through FONRID, interviewees felt that the level of funds is still not at an adequate level.

According to the survey in Senegal, the difficulty to access to financial resources has also been mentioned as an important factor hindering the development of R&D programs in private SMEs. It has been argued that financial resources are already lacking for the development of enterprises, thus even much more for R&D investments. The possibility to develop food products that address a clear demand on the market and thus to ensure outlets by using research results is the key driver for investing in R&D.

#### 3.3.5. Intellectual Property Issues

Intellectual property rights were identified by some interviewees as an important issue for cooperation in research. Researchers want to feel like their work is protected in whatever partnership they commit themselves to. In Kenya, at ICIPE for example every staff worker signs an agreement. This ensures the practice of research in a safe environment and promotes transparency too. Patents however have been known to be expensive. Few companies in Burkina Faso can afford to patent and then continue to pay to maintain the patents. In Kenya, there are not as many IP attorneys as in South-Africa for example as pointed out by the ILRI legal officer, so again this makes it expensive. Institutions therefore opt for contracts and agreements which guarantee the protection of their works. Very few organizations in Kenya and Burkina Faso therefore exploit IP laws. Theoretically, IP rights norms and standards could be beneficial to stimulate research.

The survey in Senegal underlines that protection of research results that have been achieved in collaboration between private actors and public research institutions, and the lack of visibility of the private sector in such collaboration, may constitute a constraint in encouraging the private sector in R&D.

## 4. Policy recommendations for improved framework conditions

### 4.1. Preliminary considerations

#### 4.1.1. Cooperation vs competition

In a schematic approach, one can consider that research management is all about promoting cooperation or competition among the scientists, groups of scientists or mixed groups of scientists and actors, in order to maintain dynamism and cohesion, and produce the level of knowledge required by the societies.

Cooperation is the evolutionnary driver of groups and societies. It makes the groups grow stronger, better adapted and more sustainable, in a given environment. It also values and promotes diversity, which is key to the resilience of ecosystems as well as sociosystems. Conversely, diversity values cooperative behaviors.

Within a group, competition tends to value individuals, to the detriment of the others, the best that can be identified in view of simplistic criteria such as weight, purse size, number of wisdom teeth or publications *etc*. Standardization of criteria brings more competition, and increases the risk of creating homogeneous categories and barriers between promoted and excluded people, especially if the system does not allow the expression of differentiations that are not sensitive to evolutionary processes.

Spontaneously, researchers tend to cooperate more when they need others skills and knowledge *ie* in the three main phases of research (orientation, realization and results dissemination), whereas they tend to compete in the evaluation phase, which is often associated with individual or collective rewards[20]. The institutions in charge of coordinating or doing the research must put in place the enforcement or incentive

[20] See Cirad, 2011, *Le partenariat au Cirad* (Partnership at Cirad).

rules and mechanisms (funding[21], scientific animation, organization and hierarchy, evaluation[22]) proper to articulate cooperation and competition.

#### 4.1.2. Why developing cooperation in ST&I between Europe and Africa?

It goes without saying that developing collaborations between Europe and Africa in ST&I must be beneficial to both sides, and make global research better equipped to address the world challenges, such as FNS, and producing more generic results.

Associations between EU and African research teams may be seen as balanced or unbalanced if one takes into account the only scientific production, as, in most cases, European labs are considered more advanced in S&T than their African counterparts. Balanced associations aim at producing excellence, *ie* generic and basic kind of knowledge, where unbalanced associations serve primarily the scientific empowerment of the weaker partner and the political empowerment of the stronger partner. However such unbalanced associations may be very productive when managed under genuine partnership: pulled towards scientific excellence, while in straight connection with local research needs. They are well adapted to applied research that mobilizes proven concepts or methodologies. When in line with the local major challenges, they can be more influential on private or public actors' interventions (innovations, rules, laws or policies *etc*), contribute to increasing the global productivity of research, and have more impact on FNS, locally as well as internationally.

By developing their collaborations in ST&I, Europe and Africa will increase their cultural, economic and political influence, in line with the idea that development goes along with a culture of science and that questions and stakes must be considered at a large scale and from several angles.

Research organizations may have interest in pushing for EU-Africa collaborations, as a way for their teams to share skills, specific data or research grounds, as well as to do research with a wider perspective. Institutions often cooperate on an *ad hoc* basis, or on orders placed by research funders, but some, like Cirad or IRD, have a specific mandate of building capacities at less developed organization through partnership. Individual scientists may also be driven by various interests, whether technical (exchange of expertise or concepts, methods, data, fields, tools and equipment, *etc*), economic (access to working means, resources and funding), or personal (curiosity and openness, friendship and trust).

At the opposite, one must also mention the risks associated to the development of collaborations between EU and African teams and scientists. They are of three kinds: (a) classical brain drain, (b) "research grabbing" – research agendas are not established locally but diverted by the more powerful organization, (c) "results grabbing" – the data are not equally valued. Such risks are high when research is mainly driven by funding opportunities, and the criteria associated with the allocation of research funds – set by policy makers, international donors, development agencies, NGOs, Foundations *etc*.

#### 4.1.3. Cooperation by short term project

The short term project (2-4 years) is commonly applied to the funding of development activities.

When the same duration is adopted for research projects, it encourages opportunistic alliances among research teams and organization. Alliances are formed according to the competitive call requirement – not to the scientific ambition – in order to get the best chances to capture the funding and perform the planned activities. In most cases, such alliances cannot survive to the end of the project.

[21] The constraints set by traditional projects calls often consider the geographic origin of the scientists who ally to answer the call, sometimes the previous collaborations (common papers published), but very seldom the quality of the institutional partnership – which implicitly is to say that individuals bear the memory of institutions.

[22] Evaluation is key, above all through the criteria and their ranking or weighing.

Advantages are that they promote "agile" teams that are capable of initiative, flexibility and adaptation, but can also develop a dense network … and benefit from strong administrative support to fulfil the conditions. The adverse side is that they also promote short term and resource-oriented (including skills, data or funds) associations, regardless of long term investments that are required to build partnership and capacity.

### 4.2. Suggestions from the survey

In this part, we try to summarize the information gathered in both surveys that were conducted in Burkina and Kenya.

Although it was not the main focus of the survey, it is interesting to note that the responders are linking research contribution to FNS with seeds, soil fertility and fertilization, plant protection and post-harvest methods. Climate change or political and socio-economic factors were not mentioned, although specialists know that they are often key in FNS.

At the different scales of decision taking we identified in the Part 2 – *i.e.* regional and international with the Regional Economic Organizations; national with the primarily the Ministries; organizations of the National Agricultural Research System (NARS); teams and scientists – four groups of factors are susceptible to influence, facilitate, actively promote or make more efficient the collaboration between EU and African research teams and scientists:

- the general environment in the region, the country, the organization or even the team (political stability, security, infrastructures, hosting capacity, policies etc.),
- the set of rules taken by the countries or the organizations that can ease or make difficult the exchange of scientists (international mobility, property rights) and inside the countries (access to the research fields, results sharing),
- the designs put in place to support the collaboration between researchers (national or international), between researchers and other actors, either beneficiaries, funders or policy makers,
- and lastly the momentum impulsed by the management who may value or not international exposure.

**4 decision scales, 4 drivers able to influence EU – Africa cooperation**

| Scales | Environnement | Regulation | Designs | Management |
|---|---|---|---|---|
| **Régional** | Political stability<br>Incentive international mechanisms<br>Free movement | Harmonization of rules<br>Evaluation of international teams | Political platform<br>Inclusive mecanisms<br>Specialized think tank on FNS | Guidelines for regional and international cooperation |
| **National** | Political stability and security<br>Free movement<br>Good infrastructures<br>Clear policies<br>Science funding | Research permits<br>Visas<br>Property rights<br>Evaluation | Collaborative mechanisms linking research with development and training | Priority settings<br>Evaluation of nationally funded teams |
| **Organization** | Hosting capacity and will to promote international collaboration<br>Scientific value | Internal rules facilitating hosting<br>Evaluation, incentives and sanctions | Collaborative platforms linking research and development, or research and education | Promotion of international collaborations |

| | | | | |
|---|---|---|---|---|
| **Teams /Scientists** | | Ethics of partnership | Collaborative networks | Flexibility, initiative, openness to international collaborations |

Although it looks impossible to have a direct impact on the general environment, *eg* the political stability or the research policy, the laws and rules or the management momentum, some specific policy recommendations could be suggested to enhance bi-regional cooperation.

In regards to mobility, benchmarking between Africa and Europe could help learning from successful programs. Better information sharing could be facilitated if universities and organizations were more active and committed in exchange of interns. This is a way for the organizations to engage in local development while students can learn from international systems. Although there is a general need for increasing the level of public funding, there is also a need to build capacity for little bureaucracy and "for a pragmatic approach where all levels of coordination are valued" in bi-regional cooperation in research (AFD interview, Kenya).

Complementary to these policy recommendations, the survey has also produced three main ideas.

First, it underlines the need of efficient and cost-effective mechanisms by which research can interact with the other sectors of the society around societal challenges. To make a difference, scientists need to be well linked with policy makers, beneficiaries or private sector.

There is also a similar need to foster the cooperation between African and European scientists and their organizations. Such mechanisms must be institutionalized, last longer than the common projects, be driven by the ethics of partnership and not by pure power and economic relationship.

Finally, the survey reminds us that research goes with training and education, and that any kind of EU-Africa cooperation in research must have a strong capacity building component, whether training by research or academic.

### 4.3. From suggestions to practical recommendations

Based on this and on the same general objective, one can propose several types of designs with the specific objectives:

- at regional level: an observatory of EU-Africa cooperation in ST&I with a think tank of practitioners in charge of identifying the obstacles and making propositions to their member states on how to facilitate the collaborations at the regional, national, and organization level ;
- at national level: multi-stakeholder platforms may have the objectives of directing the research, doing participatory research and monitoring it or disseminating the results [23];
- at the organization level: (a) research loops where research teams, beneficiaries, development or private actors are focused toward a common goal or product, (b) international research platforms where African and EU research scientists and teams can produce innovative knowledge while contributing to the national societal challenges including capacity building at large;
- at the team and individual level: unformal networking.

Among these various mechanisms that we estimate useful for improving the productivity of research on FNS, most fall within the responsibility of the national policies, but two are a matter of international cooperation.

The CAASTNet+ project could then include in its practical propositions to EU decision makers to support:

[23] See « Les plates-formes multi-acteurs dans le système national de recherche agricole du Bénin » (The Multi-Stake-Holder Platforms in the National Agricultural Research System of Benin)

1. The creation of an OBSERVATORY dedicated to EU-Africa collaborations in ST&I, as described in the previous paragraph: in support of the HLPD bureau, it could monitor the state of collaboration, country by country, results and failures – specially in terms of brain drain and research grabbing – advise the members states, elaborate on norms and ethics, and host the secretary of a think tank dedicated to priority areas such as FNS (Experts WG ?)
2. The constitution of a network of INTERNATIONAL EU-AFRICA RESEARCH PLATFORMS, based on long-term partnership, institutional and individual code of conduct, where institutions and scientists commit themselves to produce new knowledge that can be useful to tackle societal challenges: a description of such platforms or consortia set by French research institutions for international cooperation has been made by Albergel et al[24] in 2015, benchmarking could be extended to the other EU or Africa countries

Establishing the link between research and development or research and the private sector should be ensured by the public policies, under the advice of the observatory.

## 5. Conclusion

Research and innovation cooperation between African and European public and/or private research organisations in the field of FNS exist despite unfavourable policy contexts, like the lack of enough public investment in research in African countries for instance. However, a greater level and quality of bi-regional cooperation would certainly arise if a number of factors existing in the environment of research organisation, both in Africa and the EU, were positively influencing bi-regional cooperation.

The literature review showed that there is no a clear definition and a consensual list of framework conditions known at strengthening bi-regional cooperation. However, a number of framework conditions have been identified and one of the findings of this study was to conceptualize the issue of framework conditions. Intellectual property rights, standards and norms for instance were commonly raised as important framework conditions in the literature. The study tries to organise these most frequently listed framework conditions in within some categories, and therefore to propose a kind of typology of framework conditions according to their content and also the scale where they seem particularly relevant. Three scales of framework conditions have been proposed: the scale of research organisations where all efforts to create trust, mutual interests, transparency, co-funding, etc. can be developed; the national scale where regulations and public policies in each partner country can positively or negatively influence bi-regional cooperation; and the international scale where funding, platforms, etc. can be envisaged.

The confrontation of the literature review with the field work in Kenya, Burkina Faso and Senegal confirms the relevance of some of the framework conditions found through the literature, but leads also to minor the role of others. This is typically the case of standards and norms.

In practical, the report shows that EU-Africa cooperation in ST&I could be fostered and gain in efficiency by the creation of (i) an observatory of EU-Africa cooperation in ST&I – with extended role – and (ii) a network of international EU-Africa research platforms dedicated to AR4D. Such propositions will be submitted to the other partners of the CAASTNet+ project, at a workshop that will be organized in Montpellier, on the 30th and 31st of March 2015.

[24] The study shows that the main French research organizations (Cirad, CNRS, INRA and IRD) are providing support to three forms of international collaboration: (i) networking among individual scientists, (ii) twining of laboratories, and (iii) mixed research units, which is a rather original concept.

## References


Agricultural Sector Coordination Unit. (2011). National Food and Nutrition Security Policy. Nairobi: GOK.

ASTI - Agricultural R&D Indicators Factsheet, Burkina Faso. February 2014.

ARIMNet (Coordination of the Agricultural Research In the Mediterranean Area) (2012). Implementation of joint activities: identification and specification of the enabling conditions. ARIMNet ERANET Coordination Action Grant Agreement FP7-219262.

Burkina Faso (2014). Politique Nationale de Sécurité Alimentaire et Nutritionnelle (PNSAN), version finale. Octobre 2014. 52 pages

CAAST-Net (2009). Barriers to participation in International Collaborative Science & Technology Projects under the EU Framework Programme. Results of a stakeholder survey. Report of the CAAST-Net project, supported by the EC Grant Agreement 212625.

CAAST-Net Plus (2013). Advancing SSA-EU cooperation in research and innovation for global challenges. Annex I Description of Work (DOW), Grant agreement no: 311806, 2013-03-20.

CAAST-Net Plus (2014), Africa-EU Research Collaboration on Food Security: A Critical Analysis of the Scope, Coordination and Uptake of Findings. Draft Report, November 2014. (WP1 – Task 1.1.)

CAAST-Net Plus (2015). Bridging the public sector divide for greater impact on Food and Nutrition Security outcome around joint priorities. WP1- Task 2 report (work in progress).

CIRAD (2011). Le partenariat au CIRAD. Conseil scientifique du CIRAD. Paris : Cirad.

Committee on World Food Security, CFS (2012). Coming to terms. CFS 2012/39/4, September 2012.

Durham E., Baker H., Smith M., Moore E. & Morgan V. (2014). The BiodivERsA Stakeholder Engagement Handbook. BiodivERsA, Paris (108 pp).

EC (2012). International Cooperation in Science, Technology and Innovation: Strategies for a Changing World. Report of the Expert Group established to support the further development of an EU international STI cooperation strategy. EUR 25508. European Commission, Directorate-General for Research and Innovation, Unit D2 — North America, Latin America and Caribbean, Brussels, 2012.

EC (2014). Mapping of best practice regional and multicountry cooperative STI initiatives between Africa and Europe. Identification of financial mechanism(s) 2008-2012. Final report, 18 November 2013. Luxembourg: Publications Office of the European Union, 2014.

EU-Africa HLPD (2015). "Roadmap towards a jointly funded EU-Africa Research and Innovation Partnership, with an initial focus on food and nutrition security and sustainable agriculture" (27 April 2015).

FAO, World Bank. (2011). *Le réveil du géant assoupi, Perspectives de l'agriculture commerciale dans les savanes africaines.* Washington DC: Publishing office, the World Bank.

Horton, D, Prain, G. and Thiele, G. (2009). Perspectives on partnership: A literature review. International Potato Center (CIP), Lima, Peru. Working Paper 2009-3. 111 p.

Maselli Daniel, Jon-Andri Lys & Jacqueline Schmid (2005). Améliorer l'impact des partenariats scientifiques. Commission suisse pour le partenariat scientifique avec les pays en développement KFPE. Geographica Bernensia, Berne, 92 p

Remøe Svend Otto, Sara Medina, Kai Zhang (Eds.) (2015). Framework conditions for innovation in Southeast Asia. SEA-EU-NET project, Published by Centre for Social Innovation (ZSI), www.sea-eu.net, Copyright © 2015 SEA-EU-NET 2, Date of publication: January 2015, First edition.

**Annexes**

**Annex 1. Guide for interviews**

# WP1 Food Security
# Task 1.4 Framework conditions for bi-regional cooperation
# Deliverable 1.4 Policy level interventions for overcoming restrictive framework conditions in bi-regional cooperation

**We sincerely appreciate you taking your time to participate in this survey. Responses are voluntary and confidential, no individual analysis will be made rather information will be analyzed as per the various target groups and only as is relevant to the study.**

**Introduction of CAASTNET+/ Task 4.1**

- **CAASTNET+ is an EU-funded project** (FP7) on EU-Africa bi-regional cooperation in 3 areas: food security, climate change and health.
- **Purpose of the task 4.1**: Enhancing **framework conditions for bi regional cooperation** in food security RDI by producing evidence based recommendations and communicating them to bi-regional policy actors, policy makers, programme owners and research managers with the outcome of reducing barriers.

These recommendations will involve promoting the sharing of information, knowledge, experiences and good practices, finding innovative solutions for complex issues, establishing a level playing field, facilitating the deployment of new products and services.

- **Deliverables for the task**: Policy level interventions for overcoming restrictive framework conditions in bi-regional cooperation.
- **Definition of framework conditions:** They are guidelines that facilitate the implementation of initiatives by providing advice on administrative, regulatory and commercial factors. Framework conditions affect the deployment of existing technologies, innovative products and services.

1. **Practices of bi-regional cooperation in science and technology for food security**

Target: Research for Development (Public Research Organizations/University, EU and International Research Organizations), Foreign Delegations (EUD, S&T services in major Embassies), Aid Agencies, Private research organizations.

Projects (pre-identified from project data base)

a. What are the projects you currently implement under bi-regional cooperation in food and nutrition security?
b. Did your organization have any role in the project? Which one?
c. Which aspects of FNS do they address?
d. What types of activities are implemented? What is the timeframe?
e. Where?
f. What type of funding exists and where does it come from? Is there a preference of funding partners and if so? Why?

g. What are the constraints to bi-regional relations? Keeping in mind capacity development, data sharing, mobility, funding, private/public relations etc.

Networking

a. What are the forums where bi-regional dialogue and cooperation take place?
b. What FNS challenges are discussed in these forums?
c. How do the forums run to ensure mutual participation?
d. What is the level of researchers' mobility, their access to foreign labour markets, what is the level of brain circulation (get statistics of the number of students who travel elsewhere for research for example)?

Other tool types of bi-regional cooperation could be considered: cf HLPD Road map p42.

a. What new modes of cooperation are being explored?
b. If relevant, describe practical aspects such as reciprocal access to research infrastructures, data storage, sharing and compatibility.

For each type: after the brief description above, the **interviewee's point of view** is asked on:

c. What are the projects or networking practices, etc. you consider as good practices/ particularly interesting?
d. What are the good practices in governance and management?
e. How do you think balance can be achieved in cooperation and competition?
f. What are good practices in coordination of funds?
Why? What could be done or is being done to facilitate these good practices? What are the constraints to efforts being made?

g. What would be "ideal" bi-regional cooperation practices in food security (tool type, functioning, etc.)?
h. What factors prevent this ideal cooperation to take place?

**2. National policies on FNS**

Target: Research for Development (Public Research Organizations/University, EU and International Research Organizations), Ministries (Research, Health, Agriculture, Interministerial coordination) (or documents).

For each issue below, ask the relevance, and for concrete examples and constraints:

a. Public policy: What is the importance, using examples of harmonisation/ coherence and clear orientations, for example?
On public-private partnership?

Price regulation?

Support of smallholders' vs highly capitalized agriculture?

Local production vs importation?

b. What is the importance of Public investment in research for FNS (as a sign of political will for research),
What are examples of how the public would invest?
What is constraining public investment in research?
c. What is the relevance of a predictable regulatory framework (e.g. on IP regimes, incentives, standards). Regarding IP regimes, studies show that IP rights have led to significant research development but also that these are not well exploited (in Kenya for instance); why is this so? What is being done to change the situation?

d. What has research contributed to FNS policies? (Briefs, expertise, etc.)

3. **Private sector and innovation processes in FNS**

Target: Private Actors (National Enterprises, EU Enterprises in agriculture and agro-processing and in nutrition, Private Research Organizations).

For each issue below, ask the relevance, for concrete examples and for constraints:

a. What is the relevance of private sector contribution to FNS and practices (e.g. ethical standards, ethical code of conduct, monitoring and evaluation systems)
   What are examples of how they have contributed, and which organizations have contributed?
   What are constraints that hinder private sector participation?
b. What are the incentives to encourage private actors to engage in R&D?
   What are examples of organizations and how are they expected to engage in R&D?
   What are the constraints facing private actor engagement in R&D?
c. Private sector-academia relations (What is the impact on private sector uptake of publically funded R&D outputs)?
   What is the state of these relations? Are they well exploited? State examples.
   What are the constraints facing these relations?
d. How is multi-stakeholders engagement necessary for R&D?
   What modes of collaboration have been put in place to promote innovation?
   Which stakeholders are targeted and what are the constraints to their involvement?

4. **Perspectives (All targets)**

What could be done to reduce constraints/ enhance favourable factors to improve bi-regional cooperation in food security?

**Annex 2. Contact List for Kenya**

| Broad categories | Narrow categories | Targeted organisations |
|---|---|---|
| **1. Research for Development** | Public research (organization) | KALRO, Kenya agricultural and Livestock research Institute |
| | Public research (university) | UoN, University of Agricultural and Veterinary Sciences |
| | International research organizations | ILRI, International Livestock Research Institute and ICIPE |
| **2. Foreign delegations** | EU Delegation | Project management |
| | French Embassy | Science and Technology service |
| | | Health service |
| | German Embassy | Cooperation |
| **3. Aid agencies** | France | AFD, Agence francaise de developpement |
| | | |
| **4. Ministries** | Ministry of Science Technology and Innovation | MOEST |
| | | |
| **5. Private sector** | National enterprises | DUDUTECH |
| | EU enterprises in agriculture and agro-processing | Bonduelle |
| | EU enterprises in nutrition | Nestlé |
| | EU enterprise | HM clause |
| NGO | Rural Outreach Africa | Management |

**Annex 3. Contact List for Burkina Faso**

| Broad categories | Narrow categories | Targeted organisations |
|---|---|---|
| **1. Research for Development** | Public research (organization) | INERA, l'Institut d'Etudes et de Recherches Agricoles |
| | | IRSAT, Institut de Recherche en sciences appliquées et technologies |
| | | CNRST, Centre National pour la Recherche Scientifique et Technique |
| | International Research Organisation | 2IE, International Institute for Water and Environmental Engineering |
| | EU research | CIRAD |
| | | IRD |
| | International Project | WASCAL |
| **2. Foreign delegations** | French Embassy | S&T service |
| | | DUE, Delegation de L'Union Europeen |
| **3. Aid agencies** | | |
| **4. Ministries** | Ministry of Agriculture | DPPO/MARHASA |
| | Ministry of Health | Direction on nutrition |
| | Organization coordination | CNSA, Conseil National dans la securite alimentaire |
| | | |
| **5. Private Enterprises** | Private enterprises in Burki | Burkarina Olvea |
| | | Sodepal |
| | | Faso RIIBO |
| | | M. Landré |
| | | Ecoprix |

**Annex 4. Contact List for Senegal**

| N° | Name of the structure | Activies | Scale of the organisation |
|---|---|---|---|
| 1. | Association Afrique agro Export (AAFEX) | AAFEX is a grouping of african enterprises exporting very diverse agricultural and food local products. | 115 entreprises are members (from different scale, from very small, to medium and large industrial enterprises) originating from 16 African countries |
| 2. | ACTION SUD | A wide range of activities (management of safety quality, sustainable value-chains, sustainable tourisme, agriculture, livestock) | 20 members (15 experts qualified in different fields) |
| 3. | DAMCP (Direction des Aires Marines Communautaires Protégées) | Environment protection | Around 100 agents |
| 4. | Baobab des Saveurs | Agro-food industry | 27 people as staff (2 permanent and 25 occasional staff) |
| 5. | Conseil National de Concertation et de Coopération des Ruraux (CNCR) | Agriculture, Livestock, Forestry and Fishery | 28 federations covering the whole national territory; around 3 million members. |
| 6. | Commissariat à la Sécurité Alimentaire (CSA) | Promotion of food security at national scale through support to populations in food products | National scale |
| 7. | FOUNTY SERVICES | Transformation of cereals and fruits and vegetables ; and training | 13 agents |
| 8. | FWS (Free Work Services) | Transformation and marketinf of local products (cereals, fruits and vegetables, fish products and gathering products) | 62 permanents and occasional staff |
| ***9.*** | *Institut Sénégalais de Recherches Agricoles (ISRA)* | Applied Research agricultural development of Senegal | 500 people, among 1/3 of research staff and the remaining of administrative support staff |

| | | | |
|---|---|---|---|
| 10. | GIE Jam Bugum | Local cereals processing | 11 agents |
| 11. | MARIA DISTRIBUTION | Fruits and vegetables and cereals processing | Federations of small and medium cooperatives and enterprises. |
| 12. | NESTLE | Production and marketing of food products, notably coffe, milk, infant cereals, chocolate-based drinks, infant milks | 363 permanents and around 100 occasional staff |
| 13. | GIE Penc Santé mere enfant | Transformation of local cereals and fruits and vegetables | 20 agents |
| 14. | GIE Sœurs Jumelles | Transformation of local cereals and fruits and vegetables | 12 agents |